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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/424,760	02/03/2000	SERGEY KONSTANTINOVITCH GORDEEV	57361-57793	8547

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EXAMINER
HENDRICKSON, STUART L

ART UNIT	PAPER NUMBER
1754	14

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Please find below and/or attached an Office communication concerning this application or proceeding.

PAPER 14

Office Action Summary	Application No. 424760	Applicant(s) Gordeev
	Examiner Wilson	Group Art Unit 1754

—Th MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

P riod for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

☒ Responsive to communication(s) filed on 3/21/02.

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) 18-40 is/are pending in the application.

Of the above claim(s) 18-23 is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 24-40 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Pri rity under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

☐ All ☐ Some* ☐ None of the:

☐ Certified copies of the priority documents have been received.

☐ Certified copies of the priority documents have been received in Application No. _____.

☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____.

Atta hment(s)

☐ Information Disclosure Stat ment(s), PTO-1449, Paper No(s). _____

☒ Notice of Ref rence(s) Cited, PTO-892

☐ Notice of Draftsperson's Pat nt Drawing R vi w, PTO-948

☐ Interview Summary, PTO-413

☐ Notice of Informal Pat nt Application, PTO-152

☐ Other _____

Office Action Summary

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action. The request filed on 3/21/02 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/424760 is acceptable and a CPA has been established. An action on the CPA follows.

Claims 24-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A) In the formulas of claim 24, the recitation of producing pores based upon the desired use appears backwards; normally, a material is made and then characterized and then used based upon its properties. The phrase 'using the relationship' is unclear what steps, if any, are actually required. Is this merely 'make a calculation'?

B In claim 28, there is no way to determine what the predetermined volume of transport pores is.

C) In claim 24 lines 6-7, it is not clear if the nanoporosity is of the carbide or of the ultimate carbon product.

Claim 27 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

The claim does not recite any further step; rather merely a mathematical method for characterizing it.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 24-40 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

A) The basis for selecting the density of carbon is not given. Carbon has many forms, each having different density. There is no disclosure of which to pick.

B) The equation found in claim 24 implies that there cannot be a continuum of porosities for a carbide; that all SiC (for example) will have the same porosity, because the numbers used to derive the porosity are invariant (notwithstanding the comment in A). Thus, according to applicants model, there can only be one (or two, if one accepts that two different values can be used for 'density of carbon') different pore distributions of SiC because the porosity is said to be related to the density of 'carbon' and the weight of SiC. However, Goldberger column 7 lists logical and rational reasons why SiC can in fact have widely differing porosities, even though it is still SiC. When a theory (ie, the instant equation) contradicts known facts, the theory is summarily discarded. To say that one picks an element off the periodic table, and the act of doing so will determine the porosity of the ultimate final product *because one has also wished for a certain porosity* is to place the proverbial cart before the horse, and is prima-facie illogical, even absent the Goldberger reference. Suppose one 'desires' a certain porosity yet picks an element which according to the formulas cannot produce it, what does one do? And what if one finds that an 'impossible' porosity is in fact made (the way Goldberger does, for instance), how is this contradiction resolved? Exactly what is picked first, the X value, the R value, the element or the porosity? Which are later picked? Which are then generated by immutable mathematical formulae? How does one perform the step of claim 24 of 'using the relationship'? And if everything is predetermined in advance, why go through all the mathematics, if there is only one path and answer? Yet another questionable implication of the formula is that Cr carbide cannot

make a material having the same porosity as Mo carbide does, due to the differing weights and densities of Mo and Cr. Applicant is requested to perform these experiment (using Mo and then Cr) and report the results, and compare them to what the equations say should happen. For argument, presume that the desired X value is 2.6 nm. Also, applicant should state all elements which will meet this target and the reason why they are believed to meet it.

C) The specification states that figs. 1 and 2 shows a verified experiment, however fig. 2 shows pores not predicted by the formula. Also, there is nothing which states what the initial 'desired porosity was' (was the desired target met?) and why Ti was chosen. Therefore, this example does not in fact prove the present process valid in what it purports. Lastly, fig. 1 says '.8 nm' but fig. 2 shows a peak on the order of 1 **micron**. Therefore, the two are not in agreement.

Claims 24-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Avarbz et al.

Avarbz teaches in column 10 shaping a carbide, treating it with hydrocarbon and then with halogen at 600 degrees. The reference does not teach all the details explicitly, however choosing the claimed carbide is an obvious expedient to make a carbon having good electrode properties. The nanopore distribution appears possessed- as the claims recite that this is predetermined by virtue of the selection of the carbide. It is noted that a product and its properties are inseparable; In re Swinehart et al. 169 USPQ 226. As responsible experiments are not done randomly, it is an obvious expedient to choose reactants based upon their known or expected properties. Also, claims such as 28 are not patentable; the method or rationale of *measuring* weight change does not render a process patentable when the prior art **achieves** the same weight change.

Concerning claim 31 and 33, column 4 line 60 teaches the claimed hydrocarbons; using natural gas is an obvious expedient as it is well known as an inexpensive source of these hydrocarbons.

Applicant should provide a statement as to whether the reference and the application were commonly owned at the time the invention was made.

If applicant is aware of references which perform substantially the physical steps recited in the claims, these references should be brought to the attention of the examiner.

Any inquiry concerning this communication should be directed to examiner Hendrickson at telephone number (703) 308-2539.

Stuart Hendrickson
examiner Art Unit 1754